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ABSTRACT

Three early educational intervention programs designed to prevent mental retardation and to improve school readiness are profiled. The Abecedarian Project was begun as an experiment to test whether mental retardation, allegedly caused by inadequate environments, could be prevented by providing intensive preschool programs to children from birth to entrance into kindergarten. Project CARE compared home-based and center-based early intervention. The Infant Health and Development Program was built upon the intervention techniques of the other two programs, but included infants who were born prematurely and at low birth weight. Results from all three programs indicated that children who received center-based intervention had higher IQ scores at 3 years of age than control group children. Children who received the early intervention in the Abecedarian Project continued to exhibit higher IQ scores than control group children at age 12. Suggested practices for improving disadvantaged children's everyday lives include: (1) encouraging exploration; (2) mentoring basic skills; (3) reinforcing developmental advances; (4) rehearsing new skills; (5) avoiding inappropriate disapproval, teasing, and punishment; and (6) providing a responsive language environment. A 16-item reference list is provided. Appended materials include policy recommendations of the National Health/Education Consortium (NHEC); a description of the NHEC; and a list of NHEC members. (BC)

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At Risk
Does Not Mean Doomed

National Health/Education Consortium
Occasional Paper #4

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At Risk
Does Not Mean Doomed

National Health/Education Consortium
Occasional Paper #4

by

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Foreword

Of the many challenges confronting America today, none can be more acute or more central to government and our collective futures than the health and wellbeing of our children.

As government and communities grapple with limited health and education dollars to meet children's needs, the question of how to provide adequate services in a time of fiscal restraint looms large.

It has long been understood that many of the physical and social risks experienced by infants or young children — low birthweight, malnutrition, in-utero drug and/or alcohol exposure, poverty, and homelessness — lead to irreversible damage. Our answer to these problems has been to provide costly health and education programs to care for those children already seriously jeopardized, skewing the system toward remediation rather than prevention and early intervention.

Fortunately, a growing body of research now offers further evidence which allows this nation to reassess the way current health and education services are delivered. Research demonstrates that prenatal and early educational interventions can have long-term benefits.

In *At Risk Does Not Mean Doomed* Craig and Sharon Ramey provide compelling findings from three early educational intervention programs designed to prevent mental retardation as well as to improve school readiness. These studies not only show once again that early educational intervention can significantly improve children's intellectual performance and academic achievement, but moreover, demonstrate that certain types of children are in greater need of early intervention. In addition, the nature and length of the programs in which children participate relate strongly to the degree to which individual children will benefit. Intensive, high-quality early educational intervention can produce long-lasting benefits in both intellectual performance and school achievement.

Certain findings from the Rameys' studies especially stand out: (1) children of mothers with low IQs, who are themselves at risk, respond positively to intensive, high-quality intervention, leading to a dramatic improvement in their intellectual development; (2) early center-based educational intervention programs, when supplemented with home-based visits, are much more effective than only home-based or center-based treatment, and (3) the more actively a family participates in intensive, high-quality early intervention programs, the higher the developmental outcomes for vulnerable, high-risk children.

In light of this evidence, THE NATIONAL HEALTH/EDUCATION CONSORTIUM, a coalition of 53 national health and education organizations, believes that the full funding, development, and implementation of early educational intervention programs cannot start too soon. To that end, health, education, and social programs must work together to more effectively coordinate and integrate their services for children. The findings in the Rameys' studies indicate that early intervention is a positive factor in leading to long-term developmental benefits and reversing disabilities. It is time that such findings be translated into long-lasting, permanent policies. Early, comprehensive intervention strategies often make the difference in providing opportunities for children to function independently and effectively. This report, we believe, has profound implications for all Americans interested in the future well-being of our children and our nation.

Lawton Chiles

Lawton Chiles
Chairman
National Commission to
Prevent Infant Mortality

William Woodside

William S. Woodside
Chairman of the Board
Institute for Educational Leadership

At Risk Does Not Mean Doomed

by Craig T. Ramey and Sharon Landesman Ramey

Abstract

This paper summarizes recent positive findings from three early educational intervention programs designed to prevent mental retardation as well as to improve school readiness and educational progress. Evidence is presented to show that without early intervention, children of low IQ mothers are particularly at-risk for poor intellectual outcomes and that such children respond very favorably to intensive, systematic early intervention. In addition, new findings indicate a strong relationship between the intensity of the early educational intervention and the amount of benefits realized by individual children. Further, there is new evidence that the benefits of continuous educational intervention over the first five years of life last at least until early adolescence. We identify six essential types of experiences that we think account for the positive outcomes and that need to be systematically included to the maximum feasible level in future early intervention programs.

Purpose

The paper has three purposes. First, we will present recent new findings showing that certain children and families benefit much more than do others from early educational interventions. Second, we will summarize new evidence of long-term positive effects of early intervention on IQ and academic achievement. Third, we will discuss why we think early educational intervention is beneficial for many children and propose key ingredients that are needed in the lives of all young children.

Note: The research reported in this document was supported by the National Institute of Child Health and Human Development, the Maternal and Child Health Bureau, the U.S. Department of Education, the Administration on Children, Youth, and Families, the Robert Wood Johnson Foundation, the Carnegie Corporation, the Spencer Foundation, the W.T. Grant Foundation, and the Pew Charitable Trusts.

What are the recent findings about who benefits the most?

The new findings to be presented are from three inter-related studies conducted by Craig Ramey and colleagues: (1) the Abecedarian Project, (2) Project CARE, and (3) the Infant Health and Development Program. Each project will be described briefly below, followed by a presentation of recently published findings.

The first study, known as the Abecedarian[1] Project, was begun as an experiment to test whether mental retardation caused allegedly by inadequate environments could be prevented by providing intensive, high-quality preschool programs (along with medical and nutritional supports), beginning shortly after birth and continuing at least until children entered kindergarten. The findings from this research have confirmed that early educational intervention can significantly improve children's intellectual performance and academic achievement. New analyses, however, provide insights into *who* benefits *the very most* from this form of intervention (Martin, Ramey, & Ramey, 1990).

Traditionally, early educational interventions have been designed to serve "disadvantaged" children. The definition of "disadvantaged," however, varies from study to study. Most typically, children from economically impoverished families are those for whom early educational interventions are provided. Increasingly, it is recognized that the actual developmental quality of the home environment can differ dramatically even among poverty level families. This variation appears to be closely related to the parents' educational histories and their own intellectual and language abilities (Bradley et al, 1989). We thus decided to conduct additional analyses on the Abecedarian Project data set to answer the following questions: (1) Who truly is at the greatest risk for being cognitively delayed or mentally retarded among an extremely economically disadvantaged group of families? and (2) Who shows the greatest benefits as a result of participating in a high quality, intensive early educational intervention program?

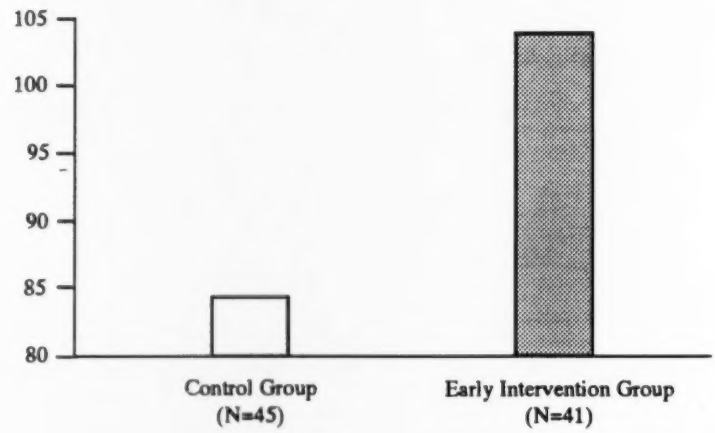
Extensive background information was available on all families even prior to the children's birth. The information included family income, parental education, maternal IQ scores (from individual testing of the mothers), marital status, number of children in the family, mental health status of the mother, and other descriptive information indicative of the family's resources relevant to childrearing. As expected, this background information is predictive of children's developmental progress, especially in the area of intellectual development (Ramey, Yeates, & MacPhee, 1984). The single strongest predictor, however, is the mother's level of tested intelligence. For example, at age 3, for the mothers with IQs below 70 points who were in the "control condition" — that is, the group whose children received supplemental medical, nutritional, and social services, but did NOT receive daily early educational intervention services from birth through age 3 — all but one of their children also had IQ scores in the mentally retarded or borderline intelligence range (that is, scores of less than 70 or from 71-85 respectively). In marked contrast, in the "early intervention" group — children who received a full day, 5-day a week, 50 weeks per year early childhood educational program — *all* of the children tested in the normal range of intelligence by the age of 3. This new finding is

1 Abecedarian means one who learns the fundamentals of something, such as the alphabet.

consistent with a selection principle identified as "targeted intervention," which indicates that primary prevention of childhood disorders is more likely for certain subgroups than for others (Landesman & Ramey, 1989). Since the majority of children with mild and moderate mental retardation come from families with extremely low resources and with parents who have limited intellectual resources themselves, these families are the ones that are most in need of early intervention, and also are those that benefit the most in terms of outcomes valued by society.

Understanding of this new finding warrants consideration in light of the major findings from the Abecedarian Project. Figure 1, adapted from a report by Martin, Ramey, and Ramey (1990), shows the overall performance of children in the control and early intervention groups at 3 years of age on the Stanford-Binet intelligence test. The children who received the early education intervention had, on average, IQ scores that were 20 points higher than those in the control condition. Further, 95 percent of the children receiving early intervention scored in the normal IQ range (IQ score of at least 85) compared to only 49 percent of children in the control group. Thus, the majority of control children had IQ scores in the "borderline intelligence" category (IQs of 70 - 84) or in the "mentally retarded range" (IQs below 70). The relative reduction of mental retardation (IQ 70) via early educational intervention was by a factor of 9.8. The recent analyses reported by Martin, Ramey, and Ramey (1990) also revealed that children whose mothers had the lowest IQ scores (below 70) were particularly vulnerable to low IQs themselves if they did not receive intensive early intervention. For example, by 4½ years of age, just before children enter the public school system (kindergarten), 86 percent had tested IQ scores below 85, which could seriously jeopardize their school progress unless special services were provided. In contrast, none of the children of the low IQ mothers in the early intervention group earned scores this low. Thus, intensive

Figure 1
Mean Stanford - Binet IQ scores at age 3 years for Early Intervention and Control Group Children from the Abecedarian Project

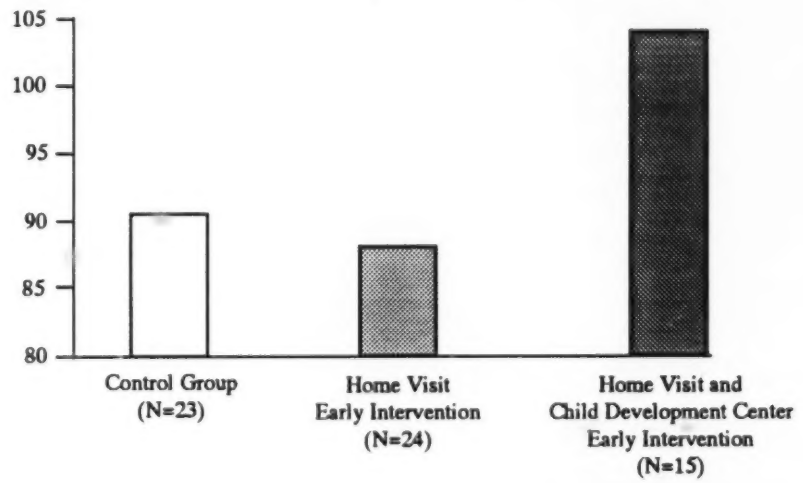


Adapted from data presented in Table 2 of the *American Journal of Public Health*, 1990, 80, p. 845.

early intervention appears to have had a particularly powerful preventive effect on children whose mothers had low IQs — while also benefitting other children from economically, socially, or educationally disadvantaged backgrounds.

The second study, the direct successor to the Abecedarian Project, is named Project CARE (Wasik, Ramey, Bryant, & Sparling, 1990) and was designed to study home-based early intervention, where mothers learned more about how to provide good developmental stimulation for their infants and toddlers, compared to center-based early intervention, the same as that provided in the Abecedarian Project. Figure 2 presents the average IQ scores of the children at age 3 in the home treatment group, the center treatment group, and the control group. All children were randomly assigned to the treatment conditions, with children in the control group receiving free health and social services. The children who received the full day, 5 day a week center-based program, supplemented by home visits as well, showed much higher intellectual performance than did the children in the home-based only treatment group or the control group. The intellectual benefits associated with receiving both the center-based and home-based home treatment condition are almost identical to those from the earlier Abecedarian Project. A disappointing finding, however, was that the home visit treatment — at least for this extremely economically disadvantaged population — was *not* able to improve the intellectual performance of these children. A noteworthy observation, however, is that mothers receiving the home visits expressed appreciation for them and continued to participate in the program for the first five years of their children's lives. The home-based treatment sought to teach mothers to carry out the same curriculum that the trained personnel in the center-based program used. Further, the home visitors (like

Figure 2
Mean Stanford-Binet IQ Scores at 3 years of age for 2 Early Intervention Groups and a Control Group of Children from Project CARE



Adapted from data presented in Figure 2 of *Child Development*, 1990, 61, p:1689.

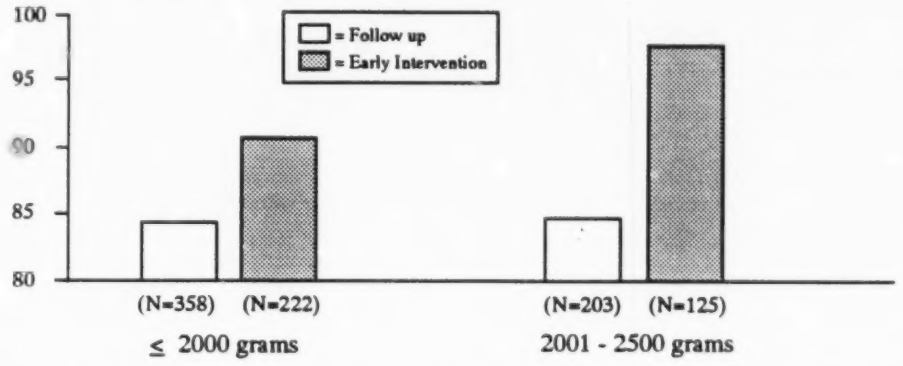
the majority of the trained personnel in the center-based treatment) were women from the same communities where the study families lived and were of the same race as the mothers. One plausible interpretation of these results is that the home-based treatment was not sufficiently intensive, on a day by day basis, to produce the same benefits that occur when a more formally organized and monitored center-based program is provided year round. Whether other home-based interventions could become sufficiently intensive remains to be determined for this population.

The third and largest study is known as the Infant Health and Development Program (Infant Health and Development Program, 1990; Ramey, Bryant, Wasik, Sparling, Fendt, & LaVange, 1992). This project built upon the techniques of the first two studies, but was extended to focus on infants who were born prematurely (37 weeks gestational age) and at low birthweight (2500 grams or about 5 1/2 pounds), since these children are at higher than average risk for poor subsequent development, especially in terms of their intellectual performance (Escalona, 1982; Hack, Blanche, Rivers, & Fanaroff, 1983; McCormick, 1985). In addition, this study was conducted in eight different locations throughout the United States and enrolled nearly 1000 children and families. Like the two earlier studies, the children and families were assigned randomly to receive either the early educational intervention or control services (as always, the control services involved free additional medical and social services that the families ordinarily would not have received). Unlike the two earlier studies in North Carolina which included only poverty level families with multiple disadvantages in their lives, the Infant Health and Development Program included a much wider range of socioeconomic groups, although the majority of families had very low incomes and low educational resources.

In this project, the early intervention included home visits throughout the first 3 years and a center-based program modeled on the Abecedarian Program. In the Infant Health and Development Program, due to health considerations frequently associated with prematurity, the children waited until 12 months to begin attending the center and continued until they were 3 years old. The key findings from this project are presented in Figure 3 (see page 8) which summarizes the Stanford-Binet IQ results at age 3 for children who were in the early intervention and control groups (Infant Health and Development Program, 1990).

As can be seen, infants in the smaller low birthweight category (below 2000 grams) and the larger category (between 2000 and 2500 grams) benefitted from the intensive early intervention. What is clear is that the heavier low birthweight babies benefitted approximately twice as much (13.2 IQ points higher than the controls) as did lighter low birthweight babies (6.6 IQ points higher than the controls). The 13 point IQ difference favoring the intervention group for the heavier low birthweight children is basically consistent with the general magnitude of differences in both Project CARE and the Abecedarian Project — a difference that across the three projects averages about 3/4 - 1 standard deviation at age 3 years. This finding also shows that even within the same high-quality intervention program, some children benefit more than others do. We interpret the findings that the lower birth weight children benefit *less* than heavier birth weight children as possibly indicating a difference in their biological status. The children who are closer to normal birthweight may be healthier and may have suffered less central nervous system damage than did the babies who were much smaller. Accordingly, they may have been able to benefit more from the general educational program that was provided for them.

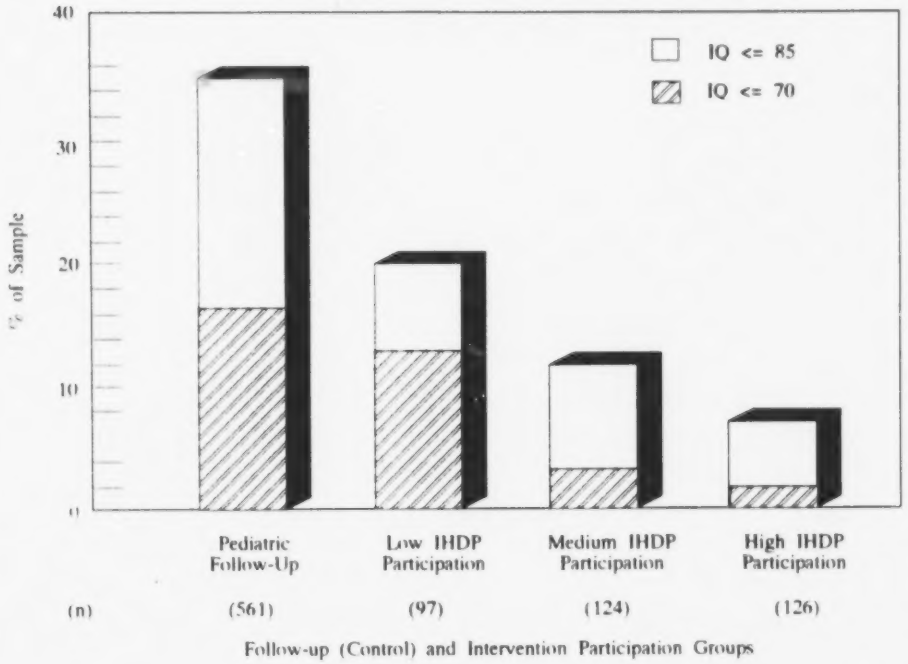
Figure 3
Mean Stanford-Binet IQ Scores at Age 3 years for Early Intervention and Control Group Children for 2 Birthweight Goups from the Infant Health and Development Program



Adapted from data presented in Table 3 of the *Journal of the American Medical Association*, 1990, 263, p. 3038

Another new and striking relationship was found between how much children and families participated and the intellectual development of the children. Figure 4 (from Ramey et al., 1992) displays the IQ results at age 3 years for control children and for low, medium, and high participants in the Infant Health and Development Program. The levels of participation were calculated on the basis of how actively the family participated in the three major educational components of the intervention: number of scheduled home visits completed, number of group parent meetings attended, and attendance of the child at the center program. In the control group, 17 percent of the children scored in the mentally retarded range (IQs below 70). In the intervention group, 13 percent of low participants earned scores in this range, compared to 4 percent of medium participants, and less than 2 percent of high participants. Thus, the most active participants had an almost nine-fold reduction in the relative incidence of mental retardation, compared to the control group. Interestingly, this relationship remained significant even after statistical adjustments were made for variations attributable to sex, race, birthweight, maternal education, maternal age, neonatal health, and variations across the eight sites. These findings support the general proposition that more active participation in intensive, high-quality early intervention programs is associated with improved developmental outcomes for vulnerable, high-risk children.

Figure 4
Percentage of children at age 3 years with borderline (IQ <= 85) and retarded intellectual performance (IQ <= 70) in the Infant Health and Development Program

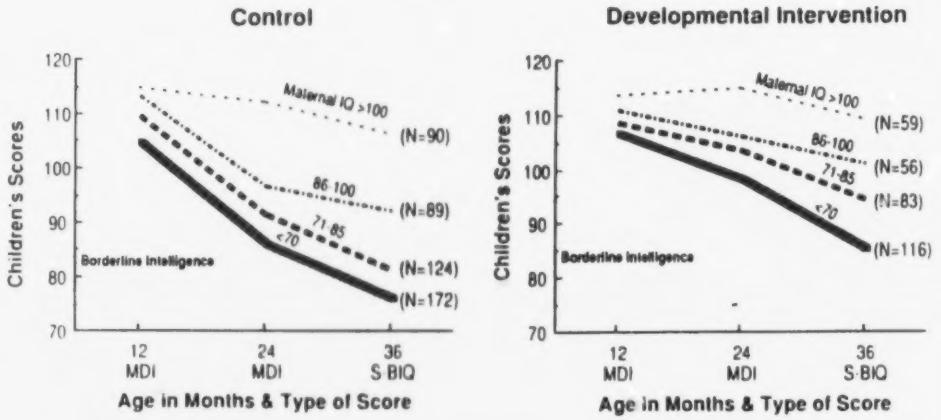


Data as presented in Figure 4 of Pediatrics, 1992, 3, p. 461

Another subgroup analysis using the mothers' Peabody Picture Vocabulary Test scores to estimate their verbal competence was conducted as a follow-up to comparable analyses on maternal intelligence in the Abecedarian Project (Ramey & Ramey, 1991). Because the sample was of sufficient size, mothers were divided into verbal competence groups as depicted in Figure 5 and the performance of their children at 12, 24, and 36 months of age was plotted for the control and intervention groups separately. Figure 5 indicates that infants at greatest risk for functioning in the borderline intelligence or mentally retarded range at 3 years had mothers with scores below 70. Fully 47 percent of control group children had IQ scores less than 75 by 36 months. In contrast, only 23 percent of intervention group infants had scores that low. The downward trend of children's scores on the Bayley Mental Development Index and the Stanford-Binet IQ as they become older is particularly striking for children whose mothers scored in retarded or borderline range and who did *not* receive the early intervention.

Figure 5
Mean Bayley MDI and Stanford-Binet IQ Scores (corrected for gestational age) at 12, 24, & 36 months of age as a function of maternal IQ group

(Infant Health and Development Program)

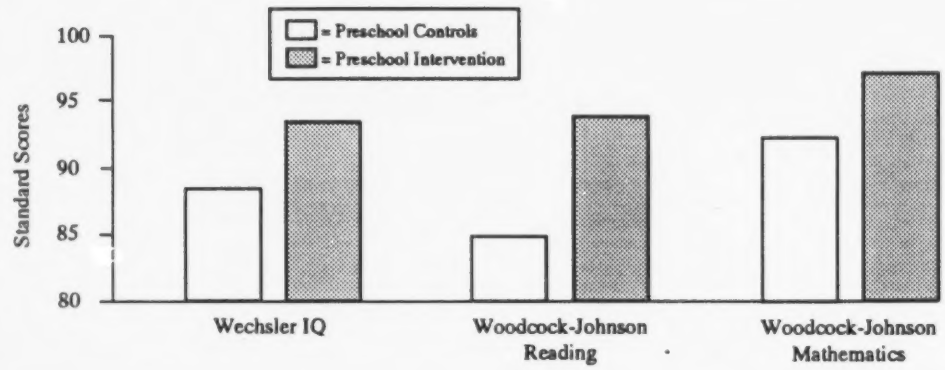


Long-lasting effects of intensive early intervention

Health and education policy is being viewed with an eye toward the likelihood that early interventions will be a positive factor in leading to long-term benefits in developmental status, educational progress, and, ultimately, constructive participation in the social and economic life of our society. The long-term evaluation of the benefits is complicated due to the many factors that come to influence one's life course over the life span, and, of course, it takes long-term longitudinal follow-up to determine the outcomes of interest.

We have now followed all of the children in the Abecedarian Project through 12 years of age. Unlike many other earlier studies in which the early intervention was *not* very intensive, as measured by the amount of the program per day, the number of days per week, the number of weeks per year, and the total years the child received the program, the results from the Abecedarian Project are very encouraging and clear. A synopsis of these findings (Ramey & Ramey, in press; Ramey, in press) is presented in Figure 6. Figure 6 shows the average (mean) IQ scores on the Weschler Intelligence Scale for Children and for the Woodcock-Johnson Achievement Tests on reading and mathematics. All scores are on the same scale with a national average of 100 and a standard deviation of 15. All of the early intervention group means are above the control group means. The range of differences across the three domains is from approximately 5 to 10 points or, to put it another way, the "effect size" is between 1/3 to 2/3 of a standard deviation — an effect that in educational circles is generally regarded as of moderate to large magnitude.

Figure 6
Mean Age - Referenced Standard Scores for IQ, Reading, and Mathematics at age 12 for children in the Abecedarian Project



In Figure 7 (on page 12), the left panel shows that early educational intervention is associated with an almost 50 percent reduction in the rate of failing a grade during the elementary school years — 55 percent for the controls versus 28 percent for those in the early intervention groups. In the right panel, evidence is presented for reduction in borderline intellectual functioning (IQ below 86) by a factor of 3.4, from approximately 44 percent in the controls to 13 percent for the intervention children. These findings support the proposition that *intensive* early educational intervention can produce *long-lasting* benefits in both intellectual performance and school achievement.

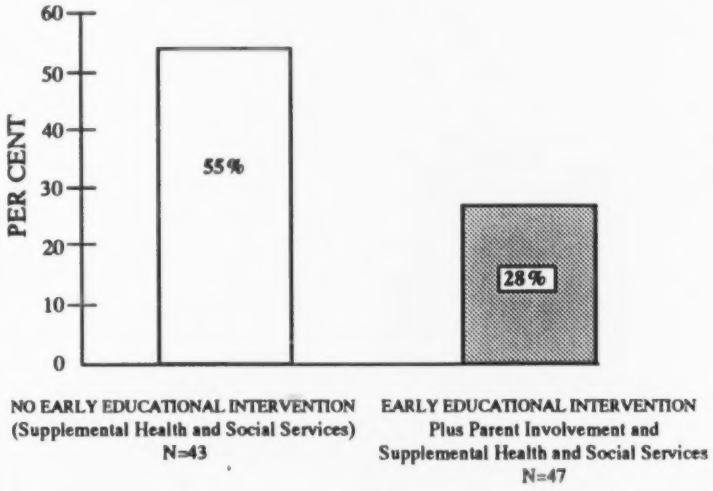
What now is vital is a more intensive analysis of different findings across different studies, especially in light of the new data indicating that (1) certain types of children are *more* in need of early intervention and (2) the amount of program received relates strongly to the benefits for individual children. Also, the quality of the school programs children receive *after* early intervention must be considered in any comparison of effects across different studies.

What can be done to improve disadvantaged children's everyday lives?

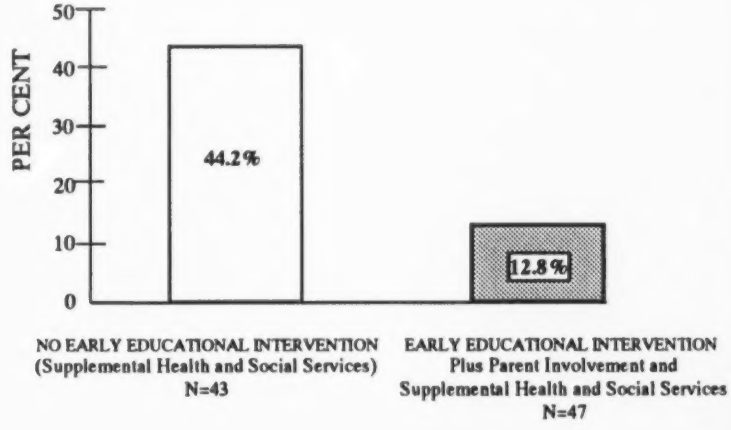
The scientific literatures on disadvantaged children, early learning environments, and basic learning strategies provide many clues about which facets of children's everyday environments facilitate (versus hinder) children's development. Although literally hundreds of variables have been correlated with children's developmental outcomes, we have endeavored to condense the empirical findings into a set of practical recommendations that inform policy planners, early interventionists, parents, and educators about how to enhance children's everyday lives. The focus is on those activities that (1) appear

Figure 7

I. Percentage of High-Risk Children Who Repeated at Least One Grade by Age 12



II. Percentage of High-Risk Children with IQs ≤ 85 (Borderline Intelligence or Mentally Retarded) at Age 12



Adapted from data presented in Figure 1 of the *Applied and Preventive Psychology*, 1992, *1*, p. 131-140

to be the most critical for learning and intellectual development and (2) can be enhanced through the behavior of responsible, caring adults in the children's lives. Table 1 from Ramey and Ramey (1992) presents these as a set of suggestions for "essential daily ingredients" in young children's lives.

Collectively, these "essential daily ingredients" are hypothesized to operate in a mutually supportive fashion. Further, we think that there is a positive relationship between the amount of daily exposure to these activities and children's intellectual progress, recognizing that biological differences also influence initial and subsequent levels of performance. For very young children, the supportive environment needs to be predictable in terms of basic opportunities and patterns of interaction with those who are responsible for their everyday well-being. Not surprisingly, a content analysis of published early educational curricula (e.g., Learninggames by Sparling & Lewis, 1981; the Portage Project by Shearer & Shearer, 1976; Partners for Learning by Sparling & Lewis, 1984; and the Hawaii Early Learning Profile by Feruno et al., 1985) includes the elements listed in Table 1, although the activities and advice are presented differently in each curriculum and the importance of avoiding inappropriate punishment is not always mentioned. Our objective here has been to offer general guidelines that could improve the quality of a child's daily learning environment.

Conclusion

Our recent findings from three separate studies support and extend a large and growing 30-year, early intervention research literature that is consistent in demonstrating positive developmental outcomes for children of low income and undereducated families. From new analyses, there is confirmation that maternal intelligence is a key factor in children's intellectual development, especially when these children are not provided with intensive daily stimulation related to learning. Fortunately, the children of low IQ mothers respond positively to intensive, high-quality early intervention, leading to a dramatic reduction in their rates of mental retardation. Unresolved issues include: (1) how best routinely to identify children and families who will benefit from such programs, (2) how early to begin programs and for how long to continue them to produce desirable developmental outcomes, and (3) whether sufficient public and political will exists to scale-up early intervention efforts to match the magnitude of the problem in our society.

Table 1.
What Young Children Need in Their Everyday Lives to Promote Positive Cognitive Development and Good Attitudes toward Learning

1. Encouragement of Exploration:

To be encouraged by adults to explore and to gather information about their environments

2. Mentoring in Basic Skills:

To be mentored (especially by trusted adults) in basic cognitive skills, such as labelling, sorting, sequencing, comparing, and noting means-ends relationships

3. Celebration of Developmental Advances:

To have their developmental accomplishments celebrated and reinforced by others, especially those with whom they spend a lot of time

4. Guided Rehearsal and Extension of New Skills:

To have responsible others help them in rehearsing and then elaborating upon (extending) their newly acquired skills

5. Protection from Inappropriate Disapproval, Teasing, or Punishment:

To avoid negative experiences associated with adults' disapproval, teasing, or punishment for those behaviors that are normative and necessary in children's trial-and-error learning about their environments (e.g., mistakes in trying out a new skill, unintended consequences of curious exploration or information seeking). Note: this does not mean that constructive criticism and negative consequences cannot be used for other child behaviors which children have the ability to understand are socially unacceptable.)

6. A Rich and Responsive Language Environment:

To have adults provide a predictable and comprehensible communication environment, in which language is used to convey information, provide social rewards, and encourage learning of new materials and skills. Note: although language to the child is the most important early influence, the language environment may be supplemented in valuable ways by the use of written materials.

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National Health/Education Consortium Policy Recommendations

- Federal and State government should make early educational intervention programs (which include a range of educational, health, family, and support services) a high priority in policy development and program management.

- Local leaders, including health professionals, educators, mayors, businesses, religious groups, and civic organizations should collaborate to make early educational intervention programs a major priority goal in their communities. These programs should become integrated into the mainstream activities of a school and/or a community.

- Federal and State policy makers and program officials should examine current funding mechanisms for early educational intervention programs and develop innovative approaches for integrating and coordinating services.

- States should mandate the development and implementation of a system that screens **all** children so that those determined to be at risk are effectively identified, as is the intent of Part H of the Individual's with Disabilities Education Act (P.L. 99-457). States should keep in mind that successful tracking programs are best achieved in a system where comprehensive and affordable health care services reach **all** children and thereby enable consistent, early screening of health and developmental problems.

- Educational, health, and social interventions for children at risk should begin shortly after birth and continue at least until children start kindergarten.

- Head Start should be fully funded and made available for every eligible child.

- Home-visiting programs that provide home-based early intervention services should be established through both the public and the private sectors in tandem with center-based early health, educational, and social intervention programs to increase their effectiveness.

- Intergenerational factors need to be considered when developing early educational intervention services. Family support and education programs should be a central element of **all** early childhood intervention programs.

National Health/Education Consortium

Good health is a significant determinant of a child's ability to learn and succeed in school. The health and education sectors, however, have historically approached programs and services for children from different perspectives. Recognizing the need for better integration of health and education programs for children, the National Commission to Prevent Infant Mortality and the Institute for Educational Leadership organized the NATIONAL HEALTH/EDUCATION CONSORTIUM in May 1990.

The project is unique in that it has brought together leaders from 53 national health and education organizations, representing nearly 11 million constituents, to bridge the gap between the worlds of health and education and to generate unified action for children. Promoting the full potential of children and providing them with the best opportunities for success will require changes in the systems which currently provide health and education services. Reforms are needed to develop more collaborative and cohesive policies and programs, unify agencies and funding streams, and provide a more comprehensive approach to children's problems.

Toward this end, the NATIONAL HEALTH/EDUCATION CONSORTIUM's activities focus on three major goals: to improve public policy in addressing the need for a better coordinated health and education delivery system; to strengthen communication and dissemination of information between health and education activities and policymakers; and to identify exemplary program models and practices which more effectively integrate health and education services. The Consortium involves educators, health professionals, policymakers, administrators, civic leaders, advocates, and parents in its efforts to bring together the health and education communities in a more integrated fashion.

The Consortium is able to attract high profile business, political, health and education leaders to give visibility and implement its mission at the federal, state, and local levels. It does not represent any particular special interest group, but can bring to bear the weight of national association consortium members on behalf of its mission. In addition, the consortium creates state and local networks across the country that will plant the seeds for similar collaborative efforts at those levels.

The foundation of the Consortium's efforts can be found in the report, *Crossing the Boundaries between Health and Education*, which documents clinical research and programs that exemplify the relationship between children's health and their learning potential. To complement this report, the Consortium is releasing a series of papers which focus on various topics relating to health and education.

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National Health/Education Consortium Members and Profiles

American Academy of Family Physicians: 66,000 physicians

American Academy of Pediatrics: 39,000 physicians

American Association of Colleges for Teacher Education: represents 700 member institutions teacher education programs

American Association of School Administrators: 18,517 school administrators

American College of Nurse-Midwives: 3,000 certified nurse-midwives

American College of Obstetricians and Gynecologists: 29,848 obstetricians and gynecologists

American Dental Association: 138,217 dentists

American Federation of Teachers: 750,000 teachers, para-professionals (teacher aides), school-related personnel, healthcare workers, federal and state employees

American Hospital Association (MCH Section): 5,870 hospitals and physicians

American Indian Health Care Association: represents 36 programs and clinics which focus on the health care of American Indians

American Medical Association: 300,000 physicians

American Nurses Association: 201,000 registered nurses

American Public Health Association: 30,977 physicians, nurses, therapists, health technicians, health support personnel, and other health professionals

American School Health Association: 3,000 health educations, nurses, physicians, and dieticians

Association for the Care of Children's Health: 4,200 nurses, child life workers, and parent leaders

Association for Supervision and Curriculum Development: 153,000 teachers, school administrators, college professors, and school board members

Association of American Medical Colleges: 126 U.S. medical schools, 450 teaching hospitals, and 92 academic professional societies

Association of Maternal and Child Health Programs: represents 269 maternal and child health programs and their directors

Association of Schools of Public Health: represents 13,000 deans, faculty, and students of schools of public health

Association of State and Territorial Dental Directors: represents 58 state and territorial dental directors.

Association of State and Territorial Health Officials: represents the 58 health officers from each of the United States and its territories.

Council of Chief State School Officers: represents 56 public officials who head departments of elementary and secondary education in each state and extrastate jurisdiction

The Council of Great City Schools: represents 46 of the largest urban public school districts in the United States

The Elementary School Center: represents 500 child-serving professionals

Healthy Mothers, Healthy Babies Coalition: represents 95 non-profit health education groups, and state and local education groups

NAACOG (The Organization for Obstetric, Gynecologic and Neonatal Nurses): 24,000 nurses

National Alliance of Black School Educators: 3,000 African-American teachers for Grades K-12

National Association for Asian and Pacific American Education: 594 members representing administrators, teachers, institutional aids, social workers, mental health workers, and students among others

National Association for the Education of Young Children: 77,000 members representing a wide range of early childhood professionals

National Association for Partners in Education: 5,5000 volunteers, presidents and executives of private businesses, teachers, and administrators

National Association of Children's Hospitals and Related Institutions: represents 108 hospitals

National Association of Community Health Centers: represents 600 health care facilities

National Association of Elementary School Principals: 36,000 elementary school principals, middle school principals, school superintendents, teachers, professors, and instructors

National Association of Hispanic Nurses: 1,000 Hispanic nurses

National Association of Pediatric Nurse Associates and Practitioners: 2,800 pediatric nurse associates and practitioners

National Association of School Nurses, Inc.: 5,800 school nurses

National Association of Secondary School Principals: 41,000 secondary school principals, administrators, guidance counselors, activities directors, and college professors

National Association of Social Workers, Inc.: 137,763 members in all fields of social work

National Association of State Boards of Education: represents 600 state boards of education and their members

National Black Nurses Association: 7,000 African-American nurses

National Center for Clinical Infant Programs: represents 7,500 programs for high risk children and families, as well as individuals

National Coalition of Hispanic Health and Human Services Organizations (COSSMHO): 700 organizations serving the Hispanic population, representing Hispanic physicians, nurses, and students

National Community Education Association: 1,600 teachers, superintendents, administrators, community education directors and coordinators, faculty and administrators of teacher education institutions and programs, community activists, private businesses, and state administrators

The National Congress of Parents and Teachers: 6.8 million parents, K-12 classrooms teachers, principals, school administrators, and students

National Education Association: 2 million K-12 classroom teachers, professors, educational support personnel, and students

National Head Start Association: 150 nationwide agency members and 30 individual members

National Medical Association: 16,000 minority physicians

National Mental Health Association: 550 local affiliate mental health associations representing mental health care providers, clients, and community health care centers

National Perinatal Association: 6,000 physicians, nurses, nurse-midwives, social workers, and consumers of perinatal services

National Rural Health Association: represents 1,750 community, migrant, and homeless health centers and their staffs

National School Boards Association: represents 52 state school board associations

National School Public Relations Association: 2,200 teachers, principals, administrators, retired teachers, students, and public relations personnel

Society for Neuroscience: represents 18,000 neuroscientists

This document does not necessarily reflect the viewpoints or positions of any of the Consortium's members.